

Appellant's Brief on Appeal
S/N 10/700,483
Docket: NEC03P166-R1a (WAK.119)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Akio AOYAMA

Serial No.: 10/700,483 Group Art Unit: 2617

Filed: November 5, 2003 Examiner: Casca, Fred A.

For: METHOD OF COLLECTING INFORMATION IN MOBILE
COMMUNICATION SYSTEM

Commissioner of Patents
Alexandria, VA 22313-1450

APPELLANT'S BRIEF ON APPEAL

Sir:

Appellant respectfully appeals the rejection of claims 1-7, 20-26, 39-45, 49-57, 62, 63, 68, 69, and 72-89 in the Office Action mailed on January 20, 2011. A Notice of Appeal was timely filed on June 22, 2011.

I. REAL PARTY IN INTEREST

The real party in interest is NEC Corporation, assignee of 100% interest of the above-referenced patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representative or Assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-7, 20-26, 39-45, 49-57, 62, 63, 68, 69, and 72-81 are all the claims presently pending in the application. Claims 8-19, 27-38, 46-48, 58-61, 64-67, 70, and 71 are canceled without prejudice or disclaimer.

Claims 20-26, 39-45, 62, 63, 68, 69 and 74 through 87 stand rejected under 35 USC §1.112, first paragraph, as allegedly failing to comply with the written description requirement. In the Advisory Action mailed on June 7, 2011, the Examiner withdrew this rejection for claims 20-26, 62-67, and 74-87, so Appellant understands that, for purpose of this Appeal, the written description rejection remains for claims 39-45, 68, and 69.

Claims 1-2, 5-7, 39, 40, 43-45, 49, 50, 53-57, 62, 63, 68-73, and 83 stand rejected under 35 U.S.C. §103(a) over Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art).

Claims 20, 21, 25, and 26 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Veerasamy, further in view of Ma.

Claims 3-4, 22, 23, 41, 42, 51, 52, 74-79, and 84-89 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Veerasamy, further in view of Ma, and further yet in view of well known prior art (MPEP 2144.03), as described in line 13 of page 2 through line 7 of page 3.

Claims 80 and 81 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Veerasamy, further in view of US Patent No. 6,628,642 to Mile'n, et al.

All rejections identified above are herein being appealed.

IV. STATUS OF AMENDMENTS

A Request for Reconsideration Under 37 CFR §1.116 was filed on May 6, 2011. In the Advisory Action mailed on June 7, 2011, the Examiner indicated that the rejection under 35 USC §112, first paragraph, for claims 20-26, 62-67, and 74-87 was withdrawn, but indicated that the rejection was maintained for dependent claim 87 and independent 39 Docket NEC03p166-R1a (330734/02; WAK.119)

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and claims dependent therefrom, thereby making it uncertain whether the rejection was withdrawn for claim 87. In the Advisory Action, the Examiner also indicated that claims 6, 44, 54, and 85 would be allowable if rewritten in independent format.

V. SUMMARY OF CLAIMED SUBJECT MATTER

As described beginning at line 10 on page 1 of the Application, for maintenance and optimization of radio communication systems, there is a need to acquire information related to reception status throughout the system service areas. Various conventional methods are known to collect reception status information from user mobile terminals. However, as described in lines 3-6 on page 5, these conventional methods typically fail to appropriately recognize causes of changes in the reception status and phenomena brought about by changes in the reception area.

In contrast, the present invention provides a method wherein user mobile radio terminals are equipped with monitoring capability for a plurality of criterion, thereby providing data for a plurality of different conditions. The information reported by the present invention includes both reception status information and coordinate position of the user mobile radio terminal.

As explained at lines 9-11 of page 14, such enhanced capability using these two reported information types permits different types of maps of the service area to be developed.

Basis in the specification for the claims:

1. (Rejected) A method of collecting information (lines 6-8, page 1; Fig. 2) used for adjustments with an information collecting server (1, Fig. 1) in a radio communication system connected to at least one mobile radio terminal (21,22, Fig. 1) for performing user communications, said method comprising:

in said mobile radio terminal (21,22, Fig. 1),

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monitoring a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria related to one or more of said adjustments (line 24 of page 5 through line 9 of page 10);

detecting as a trigger (101, Fig. 4) when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, said predetermined condition being predefined as useful information related to at least one adjustment within a service area of said radio communication system (line 24 of page 9 through line 9 of page 10);

acquiring a reception status of a radio signal (102, Fig. 4; lines 16-23 of page 9; lines 22-26 of page 12);

acquiring a coordinate position of said mobile radio terminal (103, Fig. 4; lines 11-14 of page 9; lines 7-9 of page 13); and

sending information including said reception status and said coordinate position to said information collecting server (104, Fig. 4; lines 14-16 of page 13).

2. (Rejected) A method according to claim 1, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication (lines 4-5 of page 10).

3. (Rejected) A method according to claim 1, wherein said predetermined condition comprises an occurrence of a handover failure (lines 7-8 of page 10).

4. (Rejected) A method according to claim 1, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value (lines 8-9 of page 10).

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5. (Rejected) A method according to claim 1, wherein said predetermined condition comprises a call which is made (lines 5-6 of page 11).

6. (Allowable) A method according to claim 1, further comprising:

in said information collecting server, sending value information indicative of a value given for said measured information, which is provided to said mobile radio terminal when said measured information is received (lines 7-8 of page 11); and

in said mobile radio terminal, displaying the value indicated by said value information when said value information is received (lines 7-20 of page 11).

7. (Rejected) A method according to claim 1, wherein said radio communication system comprises a CDMA radio communication system (lines 4-9 of page 2; line 24 of page 3 through line 11 of page 4; lines 11-12 of page 16).

8-19. (Canceled)

20. (Rejected) A system (Fig. 2) for collecting information used for adjustments in a radio communication system for performing user communication (lines 6-8 of page 1), comprising:

at least one mobile radio terminal (21, 22, Fig. 2) that monitors a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria, and if a trigger (101, Fig. 4) is detected when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, acquires a reception status of a radio signal (102, Fig. 4; lines 15-23 of page 9) and a coordinate position of the mobile radio terminal, and sends information including said reception status and said coordinate position (line 24 of page 9 through line 6 of page 11); and

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an information collecting server (1, Fig. 2) that receives said information from said mobile radio terminal (lines 3-7 of page 12),

wherein the information which has been received is recorded as collected information as data for developing a service map of said radio communication system, each said predetermined criterion providing data for a different service map (lines 7-20 of page 14).

21. (Rejected) A system according to claim 20, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication (lines 4-5 of page 10).

22. (Rejected) A system according to claim 20, wherein said predetermined condition comprises an occurrence of a handover failure (line 7-8 of page 10).

23. (Rejected) A system according to claim 20, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value (lines 8-9 of page 10).

24. (Rejected) A system according to claim 20, wherein said predetermined condition comprises a call which is made (lines 5-6 of page 11).

25. (Rejected) A system according to claim 20, wherein,
when said measured information is received, said information collecting server sends value information indicative of a value given for said information, which is provided to said mobile radio terminal (line 24 of page 14 through line 10 of page 15), and
wherein when said value information is received, said mobile radio terminal displays the value indicated by said value information (lines 7-20 of page 11).

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26. (Rejected) A system according to claim 20, wherein said radio communication system comprises a CDMA radio communication system (lines 4-9 of page 2; lines 11-13 of page 16).

27-38. (Canceled)

39. (Rejected) A mobile radio terminal (21, 22, Fig. 2) for sending information used for determining adjustments in a radio communication system for performing user communications to an information collecting server (1, Fig. 2) collecting said adjustment information (lines 6-8 of page 1), said mobile radio terminal comprising:

a communication status acquisition unit (33, Fig. 3) that acquires a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria, each criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system (lines 3-6 of page 5; lines 20-23 of page 6; lines 2-9 of page 10, line 21 of page 10 through line 6 of page 11; line 22 of page 12 through line 1 of page 13; lines 7-20 of page 14; line 23 of page 15 through line 18 of page 16; line 19 of page 20 through line 9 of page 21);

a reception status acquisition unit (32, Fig. 3) that acquires a reception status of a radio signal (lines 15-23 of page 9);

a positional information acquisition unit (31, Fig. 3) that acquires a coordinate position of the mobile radio terminal ; and

a control unit (35, Fig. 3), triggerable when a change of said communication status acquired by said communication status acquisition unit has satisfied a predetermined condition of one of said predetermined criteria, instructing said reception status acquisition unit to acquire (lines 15-23 of page 9) said reception status and instructing said positional information acquisition unit to acquire said coordinate position (lines 10-14 of page 9),

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and, when said reception status and said coordinate position are acquired, sending information including said reception status and said coordinate position to said information collecting server (lines 15-20 of page 10).

40. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication (lines 4-5 of page 10).

41. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises an occurrence of a handover failure (lines 7-8 of page 10).

42. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value (lines 8-9 of page 10).

43. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises a call which is made (lines 5-6 of page 11).

44. (Allowable) A mobile radio terminal according to claim 39,
wherein, when said information is received, said information collecting server sends value information indicative of a value given for said information, which is provided to said mobile radio terminal (lines 6-10 of page 12), and
wherein, when said value information is received, said mobile radio terminal displays the value indicated by said value information (lines 7-20 of page 20).

45. (Rejected) A mobile radio terminal according to claim 39, wherein said radio communication system comprises a CDMA radio communication system (lines 4-9 of page 2; lines 11-13 of page 16).

46-48. (Canceled)

49. (Rejected) A mobile radio terminal (21, 22, Fig. 2) for sending information used for adjustments in a radio communication system for performing user communications to an information collecting server (1, Fig. 2) collecting data for maintenance and adjustment activities for a service area coverage of said radio communication system (lines 6-8 of page 1), said mobile radio terminal comprising:

a communication status acquisition unit (33, Fig. 3) that acquires a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria;

a trigger information reception unit (101, Fig. 4; lines 14-20 of page 17) that receives a trigger command from said information collecting server;

a reception status acquisition unit (32, Fig. 3) that acquires a reception status of a radio signal;

a positional information acquisition unit (31, Fig. 3; lines 10-14 of page 9) that acquires a coordinate position of the mobile radio terminal; and

a control unit (35, Fig. 3), triggerable when said communication status acquired by said communication status acquisition unit has satisfied one of a predetermined condition of one of said predetermined criteria or said trigger command is received by said trigger information reception unit, instructing said reception status acquisition unit to acquire said reception status (lines 15-23 of page 9) and instructing said positional information acquisition unit to acquire said coordinate position (lines 10-14 of page 9), and, when said reception status and said coordinate position are acquired, sending information including said reception status and said coordinate position to said information collecting server.

50. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication (lines 4-5 of page 10).

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51. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises an occurrence of a handover failure (lines 7-8 of page 10).

52. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value (lines 8-9 of page 10).

53. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises a call which is made (lines 5-6 of page 11).

54. (Allowable) A mobile radio terminal according to claim 49, wherein when said information is received, said information collecting server sends value information indicative of a value given for said information, which is provided to said mobile radio terminal, and wherein, when said value information is received, said mobile radio terminal displays the value indicated by said value information (lines 1-4 of page 15).

55. (Rejected) A mobile radio terminal according to claim 49, wherein said radio communication system comprises a CDMA radio communication system (lines 4-9 of page 2; lines 11-13 of page 16).

56. (Rejected) The method according to claim 1, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel (lines 19-23 of page 9).

57. (Rejected) The method according to claim 1, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System) (lines 12-13 of page 9).

58-61. (Canceled)

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62. (Rejected) The system according to claim 20, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel (lines 19-23 of page 9).
63. (Rejected) The system according to claim 20, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System) (lines 19-23 of page 9).

64-67. (Canceled)

68. (Rejected) The mobile radio terminal according to claim 39, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel (lines 19-23 of page 9).

69. (Rejected) The mobile radio terminal according to claim 39, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System) (lines 11-14 of page 9).

70-71. (Canceled)

72. (Rejected) The mobile radio terminal according to claim 49, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel (lines 19-23 of page 9).

73. (Rejected) The mobile radio terminal according to claim 49, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System) (lines 11-14 of page 9).

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74. (Rejected) The method of claim 1, wherein said sending information to said information collecting server occurs immediately upon said trigger (lines 9-25 of page 17), said predetermined condition having been preset to permit said information to be sent to said information collecting server without said mobile radio terminal having first lost said existing communication connection (lines 17-22 of page 13).

75. (Rejected) The method of claim 1, wherein said trigger results from a condition causing a loss of said existing communication connection and said sending information to said information collecting server occurs immediately upon regaining a new communication connection (lines 22-26 of page 13).

76. (Rejected) The method of claim 1, wherein said predetermined criteria comprises a plurality of conditions causing triggers for said sending information to said information collecting server (line 23 of page 9 through line 9 of page 10).

77. (Rejected) The method of claim 76, wherein each said condition permits a different mapping condition for said radio communication system, thereby permitting a plurality of maps for an area serviced by said radio communication system to be developed (lines 9-20 of page 14; lines 5-9 of page 21).

78. (Rejected) The method of claim 77, further comprising:

retrieving data stored in said information collecting server (lines 3-5 of page 21);
and

using said retrieved data to develop at least one map for said area serviced by said radio communication system (lines 9-11 of page 14; line 21 of page 18 through line 2 of page 19; lines 5-9 of page 21).

79. (Rejected) The method of claim 76, said plurality of conditions comprising at least two of a preset condition for:

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a received signal power vs. interference power ratio per chip (E_c/I_o) indicative of a received signal quality of a common pilot channel (lines 19-21 of page 9);
a received signal intensity in a common pilot channel (lines 22-23 of page 9);
an event of a forced shut down of a communication (lines 4-5 of page 10);
an indication that said mobile radio terminal is unable to make an outgoing call (lines 5-6 of page 10);
an indication of a handover failure (lines 7-8 of page 10);
an indication of a level of a communication throughput (lines 8-9 of page 10); and
an indication of a start of a call (lines 5-6 of page 11).

80. (Rejected) A method of reporting measurement information measured by a mobile radio terminal (21,22, Fig. 2), said method comprising:

monitoring a communication status of the mobile radio terminal (lines 2-6 of page 3);
detecting a deterioration of the communication status (line 4 of page 13); and
reporting measurement information corresponding to the detected deterioration,
wherein the measurement information includes information relating to at least one of a reception quality and an intensity of a radio signal and information relating to a location of the mobile radio terminal (lines 15-23 of page 9).

81. (Rejected) A mobile radio terminal (21,22, Fig. 2) capable of reporting measurement information (lines 6-8 of page 1), said mobile radio terminal comprising:

a first unit to monitor a communication status (33, Fig. 3; lines 21-22 of page 10; lines 22-23 of page 12);
a second unit to detect a deterioration of the communication status (32, Fig. 3; lines 22-24 of page 10); and
a third unit to report measurement information corresponding to the detected deterioration (35, Fig. 3; line 25 of page 12 through line 2 of page 13),

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wherein the measurement information includes information relating to at least one of a reception quality and intensity of a radio signal and information relating to a location of the mobile radio terminal (lines 14-16 of page 13).

82. (Rejected) The mobile radio terminal of claim 81, wherein said reception quality and said intensity of the radio signal comprises a received signal quality and a received signal intensity of a common pilot channel (lines 19-23 of page 9).

83. (Rejected) The method of claim 1, wherein said sent information further includes time information (lines 10-14 of page 10).

84. (Rejected) The method of claim 1, wherein said sending information occurs only from users who have provided consent for such information sending such that dedicated software has been installed only on mobile radio terminals of consenting users (line 24 of page 8 through line 2 of page 9; lines 15-21 of page 12; lines 19-26 of page 16).

85. (Allowable) The method of claim 84, further comprising transmitting valuable points as consideration to users sending information to said information collecting server (line 24 of page 14 through line 16 of page 15).

86. (Rejected) The method of claim 1, wherein said information collecting server transmits said trigger so that a plurality of mobile radio terminals simultaneously start measuring information and sending the measured information to the information collecting sever (lines 2-6 of page 13).

87. (Rejected) The method of claim 1, wherein said predetermined criteria include at least one of signal loss and a lowering of said signal reception (lines 2-9 of page 10).

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88. (Rejected) The method of claim 1, wherein said predetermined criteria allow for a mapping of said service area of said system (lines 7-20 of page 14; lines 5-9 of page 21).

89. (Rejected) The method of claim 1, wherein said predetermined criteria allow for other than a handoff operation for the mobile radio terminal (lines 7-9 of page 10).

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant presents the following grounds for review by the Board of Patent Appeals and Interferences:

GROUND 1: The 35 U.S.C. §112, First Paragraph, Rejection for Claims 39-45 and 87

GROUND 2: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claims 1, 7, 26, 39, 45 , 55, 56, 57, 62, 63, 68, 69,72, 73, and 83

GROUND 3: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claims 2, 21, 40, and 50 (forced disconnections)

GROUND 4: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claims 5, 43, 53 (call made)

GROUND 5: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through

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line 7 of page 3 of the originally-filed specification (Admitted Art) for Claim 49
(trigger from information collection server)

GROUND 6: The 35 U.S.C. §103(a) Rejection based Veerasamy, further in view of Ma,
for Claim 20 (different service maps)

GROUND 7: The 35 U.S.C. §103(a) Rejection based on Veerasamy, in view of Ma and
well known prior art (MPEP 2144.03), as described in line 13 of page 2 through
line 7 of page 3 for Claims 3-4, 22, 23, 41, 42, 51, 52, 74-77, 79, and 84-89

GROUND 8: The 35 U.S.C. §103(a) Rejection based on Veerasamy, further in view of
US Patent No. 6,628,642 to Mile'n, et al. for Claims 80 and 81.

GROUND 9: The 35 U.S.C. §103(a) Rejection based on Veerasamy, further in view of
US Patent No. 6,628,642 to Mile'n, et al, further in view of allegedly well known
in the art for Claim 82

VII. ARGUMENTS

GROUND 1: The Written Description Rejection

The examiner alleges that claims 20-26, 39-45, 62, 63, 68, 69 and 74-87 fail to comply with the written description requirement. As best understood from the Advisory Action mailed on June 7, 2011, this rejection has been withdrawn except for claims 390-45 and 87. Appellant believes that sufficient support for the wording in all claims is clearly found in the originally-filed specification, as detailed in the section above providing the locations in the originally-filed specification that support the language of the claims.

For this reason the Board is respectfully requested to reverse this rejection for all claims, including claims 39-45 and 87.

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GROUND 2: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claims 1, 7, 26, 39, 45 , 55, 56, 57, 62, 63, 68, 69, 72, 73, and 83

As confirmed in the comments beginning at the middle of page 4 of the Advisory Action mailed on June 7, 2011, the Examiner continues to completely miss the point of Appellant's arguments and the point of the present invention in view of the cited references.

The present invention provides a new capability in the art wherein users' mobile terminals are utilized for automatically reporting events indicative of specific areas in a mobile communication service area potentially having a service-related problem. The present inventor has recognized that, by providing location information and current signal strength information, any number of service-related types of events (i.e., criteria) can be automatically reported. Thus, by reporting location and signal strength, along with knowing which criterion triggered a report, a communication service provider can instantaneously collect service-related data for different types of problems in the service area. This combination is new in the art.

The evaluations of record improperly attempt to take words out-of-context from unrelated references to allegedly demonstrate the claimed capability. This improper technique becomes particularly noticeable in the Examiner's comments in the Advisory Action mailed on June 7, 2011, wherein the Examiner, beginning on page 8, suddenly introduces conclusory statements about the contents of references not officially part of the rejections of record (e.g., reference to Lee (US Patent 6,301,237) on page 8, Rappaport (text book) on page 9, Joeng (US Patent 6,195,552) on page 9, Tong (US Patent Publication 2001/0034236) on page 9, and Imai (US Patent 7,050,482) on page 11).

More specifically, relative to claims 1, 2, 5-7, 39, 40, 43-45, 49, 50, 53-57, 62, 63, 68-73, and 83, the Examiner alleges that one of ordinary skill in the art would have been Docket NEC03p166-R1a (330734/02; WAK.119)

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motivated to combine Veerasamy with Ma and the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification and that this combination would result in the claimed invention described by these claims.

Appellant submits that the combination of these three references would fail to provide a *prima facie* obviousness rejection since there would still be at least one element still missing for even the independent claims.

Thus, relative to independent claim 1, this combination would fail to demonstrate the final claim limitation ("... sending information including said reception status and said coordinate position to said information collecting server"). This combination would also fail to teach or suggest a plurality of criterion (i.e., criteria) of service-related events ("... whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria related to one or more of said adjustments "), as follows.

The Veerasamy Reference

To improve service quality for a wireless network, eliminating coverage hole areas is required. In the coverage hole, a mobile station (MS) faces a serious communication loss, such as a call drop and/or a service loss.

Wireless service providers have a need to monitor the coverage hole for improving their service. To monitor the coverage hole, in Veerasamy, the mobile station, which detects the call drop or the service loss, acquires the location and time corresponding to the call drop and reports the service loss to a base station, along with the location and time, once the mobile station resumes service.

Therefore, primary reference Veerasamy differs from independent claim 1 by its failure to:

- (1) respond to a plurality of criterion (e.g., criteria);
- (2) acquire reception status of the radio signal upon detection of one of the predetermined criteria; and

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(3) report both coordinate position and reception status to an information server.

To allegedly overcome these deficiencies of Veerasamy, the Examiner relies upon secondary reference Ma and the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification.

The Ma Reference

Ma's invention relates to a handoff technique of a wireless network system and, therefore, has nothing to do with providing maintenance-related data. In Ma, a base station determines whether the handoff is necessary or not, as based on the signal strength of a pilot signal. Therefore, a mobile station needs to measure the signal strength of the pilot signal and report the same to the base station. If the signal strength of the pilot signal from one base station exceeds a threshold value, then the base station may determine that handoff from a current base station to a new base station (e.g., a neighboring base station) is required (paragraph [0004]).

Contrary to the Examiner's characterization, Ma adds nothing of merit to overcome the three deficiencies of primary reference Veerasamy, since secondary reference Ma does not report reception status to an information server gathering maintenance information and does not suggest reporting a plurality of types of reporting events (criteria).

The Admitted Art (AA) Described in Appellant's Specification

Line 13 of page 2 through line 7 of page 3 of the specification (AA) merely describes the conventional method of using dedicated measuring vehicles and/or dedicated measuring teams to measure reception status information.

Therefore, contrary to the Examiner's characterization, AA adds nothing of merit to overcome the three deficiencies identified above of primary reference Veerasamy, since AA does not suggest reporting reception status to an information server and does not suggest a plurality of types of reporting events (criteria).

The rejection of record appears to be based on an improper attempt to take words out-of-context from these three references, thereby allegedly arriving at a combination of

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words that the Examiner considers as somehow matching the wording of the claimed invention.

Appellant respectfully submits that the combination of Veerasamy, Ma, and AA does not demonstrate the plain meaning of the language of even the independent claims.

The remaining reference officially of record in the rejections is secondary reference, US Patent 6,628,642 to Mile'n, et al., does not overcome these above-identified deficiencies of Veerasamy. Indeed, the parameter reported by the mobile terminals in Mile'n is timing difference, a parameter that clearly fails to overcome the deficiencies of Veerasamy.

Hence, turning to the clear language of the claims, in Veerasamy, even if modified by Ma and/or AA, there is no teaching or suggestion of:

“... in said mobile radio terminal,

monitoring a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria related to one or more of said adjustments; detecting as a trigger when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, said predetermined condition being predefined as useful information related to at least one adjustment within a service area of said radio communication system;

acquiring a reception status of a radio signal;

acquiring a coordinate position of said mobile radio terminal; and

sending information including said reception status and said coordinate position to said information collecting server, as required by independent claim 1. The remaining independent claims have similar language, so that all claims are clearly patentable over Veerasamy.

Therefore, Appellants submit that claim 1, along with claims 7, 26, 39, 45 , 55, 56, 57, 62, 63, 68, 69,72, 73, and 83 are patentable over Veerasamy, by reason of these three

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deficiencies, and the Board is respectfully requested to reverse the rejection for these claims.

The Examiner's Rebuttals in the Advisory Action for Claim 1:

Beginning on page 4 of the Advisory Action mailed on June 7, 2011, the Examiner makes the following specific responses.

1. The Examiner's Rebuttal on the Definition of "criteria"

At the bottom of page 4, the Examiner writes (emphasis by the Examiner):

"Veerasamy teaches the limitation, "respond to a plurality of criterion (e.g., criteria)" for the following reasons.

The limitation "criteria" has not been defined in the specification. Based on a broad reasonable interpretation of the claims, criteria are the events that cause a call drop or RF hole. An artesian would understand that call-drop happens due to variety of reasons. An artesian would understand that some of the events that cause a call drop or RF hole are e.g., weak RSSI or weak signal strength, signal interference, total signal loss, decreased signal strength ... etc. Thus, based on a broad interpretation, the claimed criteria could be any combination of weak RSSI, signal interference, total signal loss, decreased signal strength ... because they all cause the call drop. Veersamay teaches a mobile terminal detects and reports call drop (see the rejection of claim 1). Thus, Veersamay inherently teaches the claimed criteria because the mobile device in Veersamay detects call drops (see par. 7-8 and 35-36."

Appellant's Response:

The Examiner is above clearly conceding that primary reference Veersamay teaches a single criterion of detecting call drops. Paragraph 7 and 8 clearly describe that an event of a call drop causes the mobile station to record and report the location and time of a call drop event to the server. Paragraphs 35 and 36 clearly describe that the RF coverage server will establish a map of the coverage area for this single criterion.

In contrast, the information server of the claimed invention will receive reports of a plurality of criterion (e.g., criteria), such as forced disconnections (claim 2), handover failures (claim 3), lowering of throughput (claim 4), call which is made (claim 5). As

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further described in various dependent claims (e.g., claim 77), the information server will develop a separate map for each separate criterion.

Moreover, independent claim 39 was amended to clarify that “*... each criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system.*” None of the references currently of record suggests providing automatic reports to an information collecting server for a plurality of conditions related to maintaining/improving service.

Further, Veerasamy reports only time and location for its single criterion. Veerasamy's reporting fails to additionally report “reception status”, as required by independent claim 1.

2. The Examiner's Rebuttal on Reporting of “Reception Status”

Beginning at the middle of page 5 of the Advisory Action, the Examiner writes:

“Therefore, although the cellular system of Veerasamy conventionally teaches the above limitation because Veerasamy describes a cellular communication system, the examiner has used Ma to show that the limitation, “acquire reception status of the radio signal upon detection of one of the predetermined criteria,” is conventional in the art.

Ma teaches the limitation “acquire reception status of the radio signal upon detection of one of the predetermined criteria” in Par. 36. In this paragraph, Ma teaches that a mobile terminal, in response to a handover, sends measured signal strength values to a base station. An artisan would understand that a handoff occurs due to weak signal strength, poor signal quality or signal deterioration, which all can be interpreted as the claimed criteria, based on a broad reasonable interpretation.”

Appellant's Response:

Paragraph 36 of secondary reference Ma relates to the reporting of pilot signal strength messages for purpose of handoff of calls, as clearly explained in subsequent paragraph [0037]. This feature is also present in primary reference Veerasamy, as clearly described in paragraph [0032] of Veerasamy.

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However, neither Veerasamy nor Ma transmits this information to a server gathering information to develop a service-related mapping of the service area, as a criterion for one of its mappings.

Therefore, neither Veerasamy nor Ma demonstrates the claimed requirement that a reporting for each criterion include both location and reception status. By including both parameters in its reportings, the present invention provides a mechanism for a plurality of different service-related maps, e.g., one map per each criterion.

3. The Examiner's Rebuttal on the Combination of Veerasamy and Ma

Beginning on the top of page 7 of the Advisory Action the Examiner attempts to justify the combination of Veerasamy and Ma, essentially alleging that these references are combinable because they are allegedly analogous and that they are analogous simply because “[b]oth references cover the cellular communication technology.”

Appellant's Response

Under the Examiner's arbitrary definition that references are analogous because there can be articulated some level of abstractness of some type of similarity, *all* references in the USPTO database and all documents and articles ever written become “analogous art” at some level of abstractness. There is no legal precedence that two references become analogous art simply by reason of articulating an alleged similarity.

Appellant submits that the objective evidence is that Veerasamy and Ma are non-analogous because they are classified by the USPTO into two different classifications, they are directed to two different problems, and they provide two different solutions.

More important, it is irrelevant whether these two references are arbitrarily defined as “analogous”, since even if combined the claimed invention is not demonstrated, as explained immediately above. The rejections of record for the present application suggests that the USPTO has arrived at a reasoning process wherein the arbitrary label that two references are “analogous art” becomes the sole basis for combining word out-of-context.

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Appellant submits that such reasoning is not based on engineering principles, is not the perspective of one having ordinary skill in the art, and is devoid of common sense.

GROUND 3: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claims 2, 21, 40, and 50 (forced disconnections) (“forced disconnect”)

Relative to the rejection for claim 2, on page 6 of the Office Action mailed on January 20, 2011, the Examiner points to paragraphs [0034-0035] of Veerasamy. In response, Appellant submits that even if a “dropped call” or “service lost” is broadly interpreted as similar to a “forced disconnection of the user communication”, the method of the present invention is to include information for the reception status at the time of the forced disconnection. This second parameter of reception status (e.g., received signal quality or signal intensity of a common channel) provides additional information with potential value for maintenance activities, as explained beginning at line 21 on page 4:

“In the CDMA radio communication system, however, the reception status changes for various reasons, and changes in the reception status affect the operation of the radio communication system in various ways. For example, the reception status may change either with time or as the system load changes due to a user access congestion. Changes in reception status may cause a change in the frequency of forced communication shutdowns from the network or a change in the frequency of handover failure.”

Thus, contrary to the Examiner’s characterizations to date during prosecution, the realization by the present inventor to include an additional reporting parameter as related to reception status is significant from the perspective of providing timely maintenance and good service in a CDMA radio communication system.

None of the cited references suggests providing reception status as a reported parameter, let alone a reported parameter for all of a plurality of types of reporting conditions.

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In view of the foregoing, the Board is respectfully requested to reverse the rejections for claims 2, 21, 40, and 50.

GROUND 4: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claims 5, 43, 53 (“call made”)

Beginning at the bottom of page 5 of the Office Action mailed on January 20, 2011, the Examiner addresses claim 5, conceding that the combination of Veerasamy, Ma, and AA fails to suggest using a call made as a criterion for reporting location and reception status to an information collection server. Nonetheless, the Examiner alleges that such modification would be “*... an obvious design choice ... since the applicant has not disclosed that having the predetermined condition being called made solves any stated problems or is for any particular purpose and it appears that handover being set as a precondition would perform equally well as the predetermined condition since a handover inherently comprises a call set up with the target base station.*”

In response, Appellant first expressly traverses the Examiner’s characterization that none of Veerasamy, Ma, or AA provides any report to an information collection server for handovers. Second, Appellant expressly traverses the Examiner’s characterization that reporting a handover would satisfy the description of these claims, since a call made is not equivalent to a handover.

Finally, it is brought to the Board’s attention that the significance of this claim is that, by reporting both location and reception status to an information collection server for calls made provides information useful for service of the system, as clearly explained in the description beginning at line 21 on page 4:

“In the CDMA radio communication system, however, the reception status changes for various reasons, and changes in the reception status affect the operation of the radio communication system in various ways. For example, the reception status may change

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either with time or as the system load changes due to a user access congestion. Changes in reception status may cause a change in the frequency of forced communication shutdowns from the network or a change in the frequency of handover failure."

Thus, from the above-recited passage, reporting location and status reception for calls made provides information relative to the potential changes of operation at that location, clearly useful for an organization attempting to maintain good service to clients.

Therefore, Appellant respectfully submits that these claims do indeed provide a feature that is new in the art and that is more than an "obvious design choice", given that no reference of record suggests providing reception status as a parameter to be reported to an information collection server when automatically reporting on one or more criterion related to maintaining service in a communication system. Moreover, none of the references of record suggests reporting normal "calls made" to an information collecting service.

In view of the foregoing, the Board is respectfully requested to reverse the rejections for claims 5, 43, and 53.

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GROUND 5: The 35 U.S.C. §103(a) Rejection based on Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765), and further in view of the description at line 13 of page 2 through line 7 of page 3 of the originally-filed specification (Admitted Art) for Claim 49 (trigger reception unit for trigger commands sent from the information collection server)

Relative to the rejections for claim 49, at the bottom of page 9, the Examiner improperly characterizes that claim 49 recites features analogous to those of claim 39.

Appellant brings to the Board's attention that claim 49 additionally recites that the mobile radio terminal includes a trigger information reception unit for receiving a trigger command from the information collection server. There is no such trigger mechanism in any of the cited references.

Accordingly, Appellant submits that there is at least one element that has not been demonstrated, even if all these references were to be combined.

In view of the foregoing, the Board is respectfully requested to reverse the rejection for claim 49.

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GROUND 6: 35 U.S.C. §103(a) Rejection based Veerasamy, further in view of Ma, for
Claim 20 (different service maps)

In paragraph 5 beginning on page 10 of the Office Action mailed on January 20, 2011, the Examiner alleges that paragraphs [0035, 0036, 0050, 0051, and 0061] of Veerasamy teaches generation of different service maps for the different criteria.

Appellant expressly traverses the Examiner's finding of facts, since Veerasamy has only a single reporting criterion (call or service drop) and makes reference in paragraphs [0035, 0050, 0051] to only one map, based on illustrating the RF coverage holes. There is no suggestion in Veerasamy to provide different reporting criteria, each criterion having its respective map.

Accordingly, in view of the foregoing, the Board is respectfully requested to reverse the rejection for claim 20.

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GROUND 7: The 35 U.S.C. §103(a) Rejection based on Veerasamy, further in view of Ma, further in view of Admitted Art, as described in line 13 of page 2 through line 7 of page 3, and further in view of well known prior art (MPEP 2144.03) for Claims 3, 4, 22, 23, 41, 42, 51, 52, 74-79, and 84-89 (Official Notice and improperly adding references in the Advisory Action)

In paragraph 6 beginning at the bottom of page 11 of the Office Action mailed on January 20, 2011, the Examiner rejects various claims based on invocation of Official Notice.

Appellant expressly traverses the Examiner's finding of fact and legal conclusion that these claims can be dismissed by simply declaring that specific words in these claims are "well known", since these claims are not claiming these concepts in isolation. Rather, the Examiner's initial burden includes a demonstration that these concepts are known in the art as criteria for automatic reporting to an information collection server for providing maintenance/service-related data.

Nor are the differences between the claimed invention and primary reference Veerasamy a simple matter of substituting one concept for another concept "well known in the art" as a substitute. Rather, the differences involve additional modification to primary reference Veerasamy, which primary reference already achieves its intended purpose.

Accordingly, Appellant requests that the Examiner reasonably address each of these claims in his Examiner's Answer, so that Appellant can properly respond in the Appellant's Reply Brief.

The Examiner makes no attempt whatsoever to fulfill this initial burden. Indeed, it is only the present application that suggests using a plurality of types of conditions, each with its own separate map, for automatic reporting, based upon detecting that a condition has crossed a threshold trigger point. The simple fact that these conditions or concepts are known in the art merely establishes that the present application does not need to provide much detail for purpose of enablement; it does not render them obvious in the context of the claimed invention.

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Moreover, Appellant expressly traverses the Examiner's invocation in the Advisory Action mailed on June 7, 2011, of new references (e.g., US Patent No. 6,301,234 to Lee, the textbook by Rappaport, US Patent No. 6,195,552 to Joeng, US Patent Application Publication No. 2001/0034236 to Tong, and US Patent No. 7,050,482 to Imai). Merely alleging that these words are mentioned in these references do not add anything of merit to the Examiner's position, since these references are not necessarily relevant or analogous art and merely alleging that these references contain the words of these claims do not establish any inference that concerning the use of the concepts in the context of the present invention.

Accordingly, the Examiner is respectfully requested to properly address each of these claims in his Examiner's Answer. At best, the Examiner's position of record is a mere allegation that the claimed invention would be possible, in view of the roadmap provided by the present application.

Appellant will provide a more precise response in his Reply Brief for these claims, once the Examiner provides reasonable objective support for maintaining that these concepts would be obvious to incorporate in the context of the claimed invention, but for the time being, Appellant repeats the following arguments previously of record.

For claim 3, the mere awareness in the art of the existence of handover failure is different from satisfying this claim language in which handover failures are specifically identified to be reported to a maintenance server for purpose of generating a maintenance map based on handover failure. Primary reference Veerasamy is the only reference of record making reports to a maintenance server, and Veerasamy's criterion for reporting is to report location and time of service loss, once the service is restored. There is no suggestion in Veerasamy to make a maintenance report specifically for handover failure.

Similarly, for claim 4, the Examiner is requested to provide a reference that demonstrates that lowering of throughput was known in the art as significant for a maintenance condition in a cellular telephone network, including the known desirability in the art to make reports to a maintenance server upon detecting a threshold of lowered throughput.

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Relative to claim 74, the location at which a call drop occurred in primary reference Veersamy is not reported immediately. It is reported upon regaining service. There is no reference currently of record that makes an immediate report to a maintenance server, upon a trigger event related to collecting maintenance data in a cellular network. In contrast, the present invention has a number of predetermined criteria for which an immediate report is executed.

Relative to claim 76, 77, 78, and 79, there is no reference currently of record that suggests a plurality of conditions for triggers. The only evidence currently of record is the method described in primary reference Veersamy, in which the only report condition to a maintenance server is the call drop, as reported upon returning to service. Primary reference Veersamy does not suggest reporting the two measurements required by the independent claims (e.g., reception status and coordinate position) and does not suggest providing a report for any other service-related problems. The benefit of having a plurality of reporting criteria is that more than one service-related map can be derived from the data, thereby permitting additional adjustments to be made for even better service capability.

Relative to claim 84, there is no reference currently of record that suggests using mobile terminals of only consenting users for automatically making service-related reports, as based on predetermined criteria. At best, primary reference Veerasamy is silent about this aspect of the claimed invention, but Appellants note that Veerasamy seems to suggest that all user terminals capable of making the dropped call report to the maintenance server would automatically make such reports upon entry back into service.

Relative to claim 85, there is no reference currently of record that suggests transmitting valuable points as consideration to users, including displays on the user terminals and possibly even transmission of the information to a bank server, for automatic electronic deposits into the user's bank account.

Relative to claim 86, there is no reference currently of record that suggests transmitting a trigger by a server to simultaneously start measuring information at user terminals and transmit those measurements to the server. This feature permits the

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accumulation of data at specific times, as designated by the maintenance server, including normal operation data, without having to dedicate bandwidth for continuous data reporting.

In response to the Examiner's invocation of "official notice" for these claims, Appellants respectfully submit that the mere awareness in the art of various element components does not justify that the element is obvious in the context of the claimed invention. As Judge Newman wrote in her dissent in the January 31, 2011, holding of *Tokai v. Easton* (emphasis by Appellants):

"The district court applied an incorrect standard. The determination of obviousness is not whether a person could, with full knowledge of the patented device, reproduce it from prior art or known principles. The question is whether it would have been obvious, without knowledge of the patentee's achievement, to produce the same thing that the patentee produced. This judgment must be made without the benefit of hindsight. It is improper to take concepts from other devices and change them in light of the now-known template of the patented device, without some direction in the prior art that would render it obvious to do so."

Appellants respectfully submit that the prior art evaluations currently of record improperly attempt to extract concepts out-of-context from the art and modify these concepts to arrive at the claimed invention without any direction in the prior art that would render such changes obvious.

In view of the foregoing and absent further explanation in the Examiner's Answer, the Board is respectfully requested to reverse the rejection of record for claims 3, 4, 22, 23, 41, 42, 51, 52, 74-79, and 84-89.

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GROUND 8: The 35 U.S.C. §103(a) Rejection based on Veerasamy, further in view of US Patent No. 6,628,642 to Mile'n, et al., for Claims 80 and 81.

In paragraph 7 beginning at the bottom of page 18 of the Office Action mailed on January 20, 2011, the Examiner alleges that lines 51-67 of column 1 of secondary reference Mile'n overcomes the deficiency conceded in primary reference Veerasamy.

Appellant expressly traverses the Examiner's finding of fact since the line relied upon by the Examiner actually recites (emphasis by Appellant):

"Mobile station M₄ will typically be requested to measure and report signal strength associated with neighboring base stations' transmission for the purpose of identifying when handover to another base station is desirable."

Thus, these lines clearly have nothing to do with reporting reception or intensity after detecting a deterioration of communication status. Nor does either Veerasamy or Mile'n suggest reporting two parameters and there would be no reasonable rationale to add a second parameter to Veerasamy's reporting mechanism, given that it already achieves its intended purpose. That is, primary reference Veerasamy already achieves the status of "... providing an efficient communication system."

In view of the foregoing, the Board is respectfully requested to reverse this rejection for claims 80 and 81, since there would still be at least one element missing even if these two references were to be combined.

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GROUND 9: The 35 U.S.C. §103(a) Rejection based on Veerasamy, further in view of US Patent No. 6,628,642 to Mile'n, et al, further in view of allegedly well known in art, for Claim 82

In paragraph 8 on page 20 of the Office Action mailed on January 20, 2011, the Examiner relies upon Official Notice. Appellant traverses this rejection since the mere fact that terms of art are well known is irrelevant, since Appellant is not claiming these concepts in the abstract or in isolation. Nor is the difference between the claimed invention and primary reference Veerasamy a simple substitution of an element by another known in the art as a substitute. Rather, these differences require additional modification to primary reference Veerasamy and, given that Veerasamy already performs its intended purpose, there is no reasonable rationale currently of record to further modify Veerasamy to arrive at the claimed invention other than the improper hindsight of using the claimed invention as the sole roadmap for this change.

Finally, relative to the Examiner's allegation that modification of Veerasamy would provide the benefit that the combination would provide "*... the purpose of complying with conventional radio communication measuring techniques and thus providing an efficient communication system*", Appellant submits that Veerasamy already complies with conventional radio communication measuring techniques and already provides an efficient communication system.

Accordingly, Appellant respectfully requests that the Board reverse this rejection for claim 82.

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IX. CONCLUSION

In view of the foregoing, Appellant submit that claims 1-7, 20-26, 39-45, 49-57, 62, 63, 68, 69, and 72-89, all the claims presently pending in the application, are clearly enabled and patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove all rejections of claims 1-7, 20-26, 39-45, 49-57, 62, 63, 68, 69, and 72-89.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully submitted,



Dated: July 29, 2011

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CLAIMS APPENDIX

The claims, as reflected upon entry of the Supplemental Amendment Under 37 CFR §1.111 filed on November 3, 2010, as subsequently presented in a clean format in the Amendment Under 37 CFR §1.116 filed on May 6, 2011, are presented below:

1. (Rejected) A method of collecting information used for adjustments with an information collecting server in a radio communication system connected to at least one mobile radio terminal for performing user communications, said method comprising:
 - in said mobile radio terminal,
 - monitoring a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria related to one or more of said adjustments;
 - detecting as a trigger when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, said predetermined condition being predefined as useful information related to at least one adjustment within a service area of said radio communication system;
 - acquiring a reception status of a radio signal;
 - acquiring a coordinate position of said mobile radio terminal; and
 - sending information including said reception status and said coordinate position to said information collecting server.

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2. (Rejected) A method according to claim 1, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication.
3. (Rejected) A method according to claim 1, wherein said predetermined condition comprises an occurrence of a handover failure.
4. (Rejected) A method according to claim 1, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value.
5. (Rejected) A method according to claim 1, wherein said predetermined condition comprises a call which is made.
6. (Allowable) A method according to claim 1, further comprising:
 - in said information collecting server, sending value information indicative of a value given for said measured information, which is provided to said mobile radio terminal when said measured information is received; and
 - in said mobile radio terminal, displaying the value indicated by said value information when said value information is received.
7. (Rejected) A method according to claim 1, wherein said radio communication system comprises a CDMA radio communication system.

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8-19. (Cancelled)

20. (Rejected) A system for collecting information used for adjustments in a radio communication system for performing user communication, comprising:

at least one mobile radio terminal that monitors a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria, and if a trigger is detected when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, acquires a reception status of a radio signal and a coordinate position of the mobile radio terminal, and sends information including said reception status and said coordinate position; and

an information collecting server that receives said information from said mobile radio terminal,

wherein the information which has been received is recorded as collected information as data for developing a service map of said radio communication system, each said predetermined criterion providing data for a different service map.

21. (Rejected) A system according to claim 20, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication.

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22. (Rejected) A system according to claim 20, wherein said predetermined condition comprises an occurrence of a handover failure.

23. (Rejected) A system according to claim 20, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value.

24. (Rejected) A system according to claim 20, wherein said predetermined condition comprises a call which is made.

25. (Rejected) A system according to claim 20, wherein,
when said measured information is received, said information collecting server sends value
information indicative of a value given for said information, which is provided to said
mobile radio terminal, and
wherein when said value information is received, said mobile radio terminal displays the
value indicated by said value information.

26. (Rejected) A system according to claim 20, wherein said radio communication system
comprises a CDMA radio communication system.

27-38. (Canceled)

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39. (Rejected) A mobile radio terminal for sending information used for determining adjustments in a radio communication system for performing user communications to an information collecting server collecting said adjustment information, said mobile radio terminal comprising:

a communication status acquisition unit that acquires a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria, each criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system;

a reception status acquisition unit that acquires a reception status of a radio signal; a positional information acquisition unit that acquires a coordinate position of the mobile radio terminal; and

a control unit, triggerable when a change of said communication status acquired by said communication status acquisition unit has satisfied a predetermined condition of one of said predetermined criteria, instructing said reception status acquisition unit to acquire said reception status and instructing said positional information acquisition unit to acquire said coordinate position, and, when said reception status and said coordinate position are acquired, sending information including said reception status and said coordinate position to said information collecting server.

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40. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication.

41. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises an occurrence of a handover failure.

42. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value.

43. (Rejected) A mobile radio terminal according to claim 39, wherein said predetermined condition comprises a call which is made.

44. (Allowable) A mobile radio terminal according to claim 39,
wherein, when said information is received, said information collecting server sends value
information indicative of a value given for said information, which is provided to said
mobile radio terminal, and
wherein, when said value information is received, said mobile radio terminal displays the
value indicated by said value information.

45. (Rejected) A mobile radio terminal according to claim 39, wherein said radio
communication system comprises a CDMA radio communication system.

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46-48. (Canceled)

49. (Rejected) A mobile radio terminal for sending information used for adjustments in a radio communication system for performing user communications to an information collecting server collecting data for maintenance and adjustment activities for a service area coverage of said radio communication system, said mobile radio terminal comprising:

a communication status acquisition unit that acquires a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria;

a trigger information reception unit that receives a trigger command from said information collecting server;

a reception status acquisition unit that acquires a reception status of a radio signal;

a positional information acquisition unit that acquires a coordinate position of the mobile radio terminal; and

a control unit, triggerable when said communication status acquired by said communication status acquisition unit has satisfied one of a predetermined condition of one of said predetermined criteria or said trigger command is received by said trigger information reception unit, instructing said reception status acquisition unit to acquire said reception status and instructing said positional information acquisition unit to acquire said coordinate position, and, when said reception status and said coordinate position are

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acquired, sending information including said reception status and said coordinate position to said information collecting server.

50. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises an occurrence of a forced disconnection of the user communication.

51. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises an occurrence of a handover failure.

52. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises a lowering of a throughput of said user communication below a predetermined threshold value.

53. (Rejected) A mobile radio terminal according to claim 49, wherein said predetermined condition comprises a call which is made.

54. (Allowable) A mobile radio terminal according to claim 49, wherein when said information is received, said information collecting server sends value information indicative of a value given for said information, which is provided to said mobile radio terminal, and wherein, when said value information is received, said mobile radio terminal displays the value indicated by said value information.

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55. (Rejected) A mobile radio terminal according to claim 49, wherein said radio communication system comprises a CDMA radio communication

56. (Rejected) The method according to claim 1, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel.

57. (Rejected) The method according to claim 1, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System).

58-61. (Canceled)

62. (Rejected) The system according to claim 20, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel.

63. (Rejected) The system according to claim 20, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System).

64-67. (Canceled)

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68. (Rejected) The mobile radio terminal according to claim 39, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel.

69. (Rejected) The mobile radio terminal according to claim 39, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System).

70-71. (Canceled)

72. (Rejected) The mobile radio terminal according to claim 49, wherein said acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel.

73. (Rejected) The mobile radio terminal according to claim 49, wherein said acquiring said coordinate position information further includes acquiring coordinate information of said mobile radio terminal by using GPS (Global Positioning System).

74. (Rejected) The method of claim 1, wherein said sending information to said information collecting server occurs immediately upon said trigger, said predetermined condition having been preset to permit said information to be sent to said information

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collecting server without said mobile radio terminal having first lost said existing communication connection.

75. (Rejected) The method of claim 1, wherein said trigger results from a condition causing a loss of said existing communication connection and said sending information to said information collecting server occurs immediately upon regaining a new communication connection.

76. (Rejected) The method of claim 1, wherein said predetermined criteria comprises a plurality of conditions causing triggers for said sending information to said information collecting server.

77. (Rejected) The method of claim 76, wherein each said condition permits a different mapping condition for said radio communication system, thereby permitting a plurality of maps for an area serviced by said radio communication system to be developed.

78. (Rejected) The method of claim 77, further comprising:
retrieving data stored in said information collecting server; and
using said retrieved data to develop at least one map for said area serviced by said radio communication system.

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79. (Rejected) The method of claim 76, said plurality of conditions comprising at least two of a preset condition for:

- a received signal power vs. interference power ratio per chip (E_c/I_0) indicative of a received signal quality of a common pilot channel;
- a received signal intensity in a common pilot channel;
- an event of a forced shut down of a communication;
- an indication that said mobile radio terminal is unable to make an outgoing call;
- an indication of a handover failure;
- an indication of a level of a communication throughput; and
- an indication of a start of a call.

80. (Rejected) A method of reporting measurement information measured by a mobile radio terminal, said method comprising:

- monitoring a communication status of the mobile radio terminal;
 - detecting a deterioration of the communication status; and
 - reporting measurement information corresponding to the detected deterioration,
- wherein the measurement information includes information relating to at least one of a reception quality and an intensity of a radio signal and information relating to a location of the mobile radio terminal.

81. (Rejected) A mobile radio terminal capable of reporting measurement information, said mobile radio terminal comprising:

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a first unit to monitor a communication status;
a second unit to detect a deterioration of the communication status; and
a third unit to report measurement information corresponding to the detected deterioration,
wherein the measurement information includes information relating to at least one of a reception quality and intensity of a radio signal and information relating to a location of the mobile radio terminal.

82. (Rejected) The mobile radio terminal of claim 81, wherein said reception quality and said intensity of the radio signal comprises a received signal quality and a received signal intensity of a common pilot channel.

83. (Rejected) The method of claim 1, wherein said sent information further includes time information.

84. (Rejected) The method of claim 1, wherein said sending information occurs only from users who have provided consent for such information sending such that dedicated software has been installed only on mobile radio terminals of consenting users.

85. (Allowable) The method of claim 84, further comprising transmitting valuable points as consideration to users sending information to said information collecting server.

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86. (Rejected) The method of claim 1, wherein said information collecting server transmits said trigger so that a plurality of mobile radio terminals simultaneously start measuring information and sending the measured information to the information collecting sever.

87. (Rejected) The method of claim 1, wherein said predetermined criteria include at least one of signal loss and a lowering of said signal reception.

88. (Rejected) The method of claim 1, wherein said predetermined criteria allow for a mapping of said service area of said system.

89. (Rejected) The method of claim 1, wherein said predetermined criteria allow for other than a handoff operation for the mobile radio terminal.

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EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None